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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/702,889	11/01/2000	Makoto Onozawa	122.1422	8796

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EXAMINER

ALPHONSE, FRITZ

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/702,889

Applicant(s)

ONOZAWA ET AL.

Examiner

Fritz Alphonse

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 19 is/are allowed.
- 6) ☒ Claim(s) 1,2,5,6,8,9,11,12 and 16 is/are rejected.
- 7) ☒ Claim(s) 3,4,7,10,13-15,17 and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 November 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 14,15.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 5, 6, 8, 11, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (U.S. Pat. No. 6,211,867) in view of Tanaka (U.S. Pat. No. 5,438,290).

As to claims 1 and 11, Kim (fig. 1) shows a plasma display apparatus, comprising: a plasma display panel equipped with first electrodes (X) and second electrodes (Y1-Y480) arranged adjacently to each other, extending in a first direction, and address electrodes (150-1, 150-2) extending in a second direction at a right angle to the first direction; an X sustaining circuit (i.e., X-electrode driver 186) that supplies sustaining pulses to said first electrodes (X); a Y sustaining circuit (160) that supplies sustaining pulses to said second electrodes (Y1-Y480). Kim (figs. 1, 6) teaches about a path connected to a first or second electrodes and a high and a low potential power supply (col. 3, lines 66 through col. 4, line 14; col. 7, lines 66 through col. 7, line 10). Kim (fig. 4) teaches about adjustment of the power recovery circuit (col. 5, lines 15-53).

Kim does not explicitly disclose a phase adjusting circuit that adjusts timing of a changing edge of a driving signal.

However, in the same field of endeavor, Tanaka discloses a phase adjustment circuit that adjusts timing of a changing edge of a driving circuit (fig. 9; col. 5, lines 47-51; col. 9, lines 61 through col. 10, line 9).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Kim's display apparatus with the low power driver circuit, as disclosed by Tanaka. Doing so would provide an energy recovery circuit free from any energy loss caused by a diode having a forward bias rising voltage and any unnecessary resistance or parasitic capacitance (col. 6, lines 42-47).

As to claim 2, Kim (figs. 1, 3) teaches about a plasma display apparatus, wherein the X sustaining circuit (186) and the Y sustaining circuit (160) include power recovery circuits each of which has a resonant circuit (see inductors L1 and L2 in figure 3) formed with a display capacitor of the plasma display panel, recovers energy when an application of the sustaining pulse is released and uses the recovered energy for, a next application of the sustaining pulses (col. 3, lines 56 through col. 5, line 14).

As to claim 5, Kim (figs. 1, 2) shows a plasma display apparatus, wherein the plasma display panel forms a first display line between one side of one of the second electrodes and one adjacent electrode of the first electrodes, a second display line between another side of the one second electrode and another adjacent electrode of the first electrodes (note the plurality of display lines in figure 1 of the PDP), and forms a display field of a frame by plural subfields, and provides a gray scale by combining said subfields selectively for display (note in figure 2, the plurality of subfields per period in each field). Kim teaches about X and Y sustaining circuits that supply the sustaining pulse to an odd-numbered electrode of the first electrodes, and X and Y sustaining

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circuits that supplies the sustaining pulse to an even-numbered electrode of the first electrodes (col. 3, lines 47-65).

As to claims 6, 8 and 12, the claims have substantially the limitations of claim 1. Therefore, they are analyzed as previously discussed in claim 1 above.

***Claim Rejections - 35 USC §103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 9 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marcotte (U.S. Pat. No. 5,642,018) in view of Barclay (U.S. Pat. No. 4,594,588).

As to claim 9, Marcotte (fig. 7) shows a sustain signal driver which enables energy recovery and prevents inductively created flyback currents from affecting pixel sites in the panel (see col. 1, lines 45-50; col. 1, lines 45-50, lines 60-64) wherein delay times of circuit devices with respect to signals, which are measured (note in figure 7 the current meters A1 and A2 for measuring the delay time of circuit devices). Marcotte (figs. 6, 8) teaches about timing of a changing edges (col. 5, lines 41- col. 6, line 12; col. 6, lines 28-62) of each said sustaining pulse falls within a predetermined allowance (col. 8, lines 45-46; col.8, lines 62 -col.9, line 5); and the sets of the selected circuit devices are provided for the plasma display apparatus (col. 7, lines 49-50).

Marcotte does not disclose a method of manufacturing a plasma display apparatus. However, the limitation is disclosed by Barclay (col. 1, lines 37-40).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to improve upon the plasma margin control as disclosed by Barclay. Doing so would provide an improved adjustment for the sustain signal operating point in a plasma display device.

As to claim 16, the claim has substantially the limitations of claim 9; therefore, it is analyzed as previously discussed in claim 9 above.

***Allowable Subject Matter***

5. Claims 3-4, 7, 10, 13-15 and 17-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 19 is allowable because none of the cited references disclose "a third output device that switches a connection state of the path and the power recovery circuit to a state in which power is supplied from the power recovery circuit to the path, a fourth output device that switches the connection state of the path and the said power recovery circuit to a state in which power is recovered from the path to the power recovery circuit."

***Response to Arguments***

6. Applicant's arguments filed on 6/18/03 have been fully considered but they are not persuasive.

In the response filed on April 15, 2003, Applicants argued "Kim discloses only adjustment of changing edges of driving signals of a power recovery circuit, and does not disclose or suggest first and second phase adjusting circuits that adjust timing of changing edges of driving signals of first and second output devices."

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In that regard, the examiner respectfully asserts that these limitations are clearly disclosed by Kim (see figure 3). Kim (figure 3) shows a circuit diagram of the power recovery circuit which suggests first and second phase adjusting circuits (due to inductors L1 and L2) that adjust timing of changing edges of driving signals of first and second output devices."

Applicants argues that "The concept of Marcotte is completely different from that of the invention recited in claim 9."

The Examiner, however, does not agree with that statement because Marcotte's art clearly discloses substantially the limitations recited in claim 9 and is being used as an energy recovery driver circuit

#### *Conclusion*

7. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks, Washington, D.C. 20231

**or faxed to:** (703) 872-9306 for all formal communications.

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Fourth Floor (Receptionist).

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fritz Alphonse, whose telephone number is (703) 308-8534. The examiner can normally be reached on M-F, 8:30-6:00, Alt. Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert De Cady, can be reached at (703) 305-9595.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Information regarding the status of an application may also be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Fritz Alphonse

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August 19, 2004

  
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